



Joint Non-Lethal Weapons Program

Master Plan June 2000





The Joint Non-Lethal Weapons Program logo was created to represent the primary aspects of NLW applications. The Shield is a symbol of protection. A sword poised in a downward position representing non-lethal military protection of life and peace separates the four stars, one for each of the services. The four stars are white, and the two halves of the shield are red and blue to represent the United States of America while the olive branches are symbols of peace. The insignia is presented over the earth symbolic of our global commitments. The Latin motto, “Pax Custimus–Vita Custimus” is translated “Safeguarding peace--safeguarding life”.

“Today, world events mandates a need to project non-lethal force across all levels of war to enable our warfighters and leaders to effectively deal with a host of traditional as well as non-traditional threats.....I intend to meet this challenge by pursuing the development of a new generation of non-lethal weapons—an effort to leverage 21st century technology to enable our warfighting CINCs to capitalize on a full-spectrum non-lethal capability.”

*Marine Corps General J.L. Jones
32nd Commandant of the Marine Corps*

“In situations in which the decision has not yet been made to use lethal force, non-lethal weapons could give policymakers a more potent weapon than economic sanctions, which tend to be both indiscriminate and ineffective. Used alone, NLW could penalize civilian economies without high civilian casualties. NLW could also add weight and credibility when used in conjunction with economic sanctions, thus strengthening American’s diplomatic hand”

*Independent Task Force Report
Non-Lethal Technologies: Progress & Prospects
Sponsored by the Council on Foreign Relations
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FOREWORD

The Memorandum of Agreement of June 23, 1999, among the Services and Commander in Chief United States Special Operations Command, states that the Joint Non-Lethal Weapons Program (JNLWP) will develop and provide to the Department of Defense, a fully integrated and coordinated Non-Lethal Weapons program that meets the intent of Congress and provides the best Non-Lethal Weapon technologies and equipment to support our operating forces.

Non-Lethal weapons in the current inventory and in the future must continue to provide enhanced capabilities to effectively deal with increasing challenges and demands across the full spectrum of conflict. In order to broaden the set of responses and options available to our senior political and military decision makers and support the tactical commanders, non-lethal technologies must provide flexible and selective engagement capabilities that contribute to mission accomplishment and have utility in combat operations in Major Theater War (MTW), in the execution of Military Operations Other Than War (MOOTW), and in other supporting operations.

In the chaotic world of today, with increasing asymmetric challenges, Non-Lethal technologies can critically supplement and augment lethal force in the battlespace. An understanding and education on the opportunities and use of Non-Lethal Weapons requires a paradigm shift from existing philosophies that the military provides only deterrence and lethal capabilities to the elements of National Power.

The purpose of this Master Plan is to serve as a focal point for our efforts by defining the Vision, Goals, and Objectives for the Joint Non-Lethal Weapons Program (JNLWP). Success in meeting the requirements of the goals and objectives within the Master Plan will most assuredly accomplish the mandates of the Memorandum of Agreement, comply with the Congressional and Department of Defense directives and ultimately provide the warfighting CINCs with Non-Lethal capabilities to succeed in fulfilling their military objectives.

E. R. BEDARD
Lieutenant General, U.S. Marine Corps
Chairman, Joint NLW Integrated Product Team

**JOINT NON-LETHAL WEAPONS
PROGRAM (JNLWP)
FY00 MASTER PLAN**

JNLWP FY00 MASTER PLAN

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JOINT NON-LETHAL WEAPONS PROGRAM FY00 MASTER PLAN

MISSION

The Joint Non-Lethal Weapons Program (JNLWP) was established to provide warfighters a family of Non-Lethal Weapon (NLW) systems with a range of optional non-lethal capabilities across the full spectrum of threats and crisis. The Joint Non-Lethal Weapons Directorate (JNLWD) is responsible for the centralized coordination and integration of NLW technologies and systems that will support the Services and Combatant Commanders. NLWs are defined as “weapons that are explicitly designed and primarily employed so as to incapacitate personnel or materiel, while minimizing fatalities, permanent injury to personnel, and undesired damage to property and the environment.”

The JNLWP Master Plan supports Joint Vision 2020 (JV 2020), the Defense Planning Guidance (DPG), and provides a vision, including goals and objectives which will guide the management and execution of the JNLWP. Additionally, it is a tool for managing and implementing the JNLWP as it evolves through the collaborative efforts of the joint community. This plan references and supports a number of the 21st Century challenges, qualifies a need for Joint Non-Lethal Weapons (JNLW) in meeting Desired Operational Capabilities (DOCs), and establishes the program foundation. Challenges and DOCs are identified and briefly described in *Chairman Joint Chiefs of Staff Instruction (CJCSI) 3010.02 Joint Vision Implementation Master Plan (JIMP)*.

This Master Plan constitutes a comprehensive and holistic program that identifies the interrelationships between all non-lethal development activities that includes: training, doctrine, concept exploration, requirements generation, science and technology, research and development, modeling and simulation, experimentation, and resource management. Key supporting elements of the JNLWP Master Plan will be formally staffed to maximize joint coordination.

1.0 BACKGROUND

The JNLWP began in 1996 as a Congressional initiative. Department of Defense (DoD) Directive 3000.3, dated July 9, 1996, established the policy and assigned responsibilities for the JNLWP. This directive applies to all NLW development and acquisition programs and the employment of fielded NLWs. The Commandant of the Marine Corps was designated as the Executive Agent (EA) for the program.

Section 230 of the National Defense Authorization Act for Fiscal Year 1997 (Public Law 104-201) included a program element to consolidate and integrate the DoD's and Services' NLW technology programs. The National Defense Authorization Act for FY98 (S.Rept.105-29) determined the importance of advanced NLW technologies and established the requirement for providing U.S. military forces with greater flexibility to manage, shape, deter, or contain future conflicts. Deployments to Somalia, Haiti, Bosnia, and, most recently, Kosovo demonstrated the operational need for NLW capabilities to supplement and/or augment lethal force in the battlespace.

2.0 VISION

The keystone of the JNLW vision will be the joint development and fielding of a family of NLW systems applied

across the full spectrum of military operations, matched to the warfighter's requirements for the 21st Century. "The primary task of the Armed Forces will remain to deter conflict but—should deterrence fail—to fight and win the nation's wars" (JV 2020). As the force stands ready to fight and win with lethal force, it is certain that the Services will continue to be called upon to execute a wide range of contingency operations including humanitarian assistance, peacekeeping operations, and high intensity conflict. In characterizing such operations, the 31st Commandant of the Marine Corps, General C.C. Krulak, used the "Three Block War" analogy to describe the complexity, difficulty and challenges of urban warfare at the small unit level. Within the space of three city blocks, a small unit may be providing humanitarian assistance in one block, enforcing peace in another block and engaging in open combat in a third block.

The four operational concepts (Dominant Maneuver, Precision Engagement, Focused Logistics, and Full-Dimensional Protection) collectively allow our Armed Forces to achieve "Full Spectrum Dominance" defined as the ability to conduct decisive operations across the full range of military operations. Precision Engagement consists of a system of systems that enables our forces to locate the objective or target, provide responsive command and control, generate the desired effect, assess our level of success, and retain the flexibility to re-engage with precision. The advent of NLW systems will enhance ability to effectuate Precision Engagement; provide a broader range of desired, precisely directed target effects; and significantly reduce undesired personal injury and materiel damage. The lethal capability was clearly demonstrated in Kosovo and Serbia; however, an ability to limit collateral damage (generate the

desired effect) to infrastructure was not possible. Contingency operations associated with peacetime engagement, deterrence, and conflict prevention will continue to require a capability for rapidly and effectively controlling unruly populace or belligerent forces and for keeping potentially explosive situations from escalating. The JNLWP provides direction and the means for augmenting the Armed Forces with optional NL capability for achieving select military objectives, minimizing injury to noncombatants and limiting collateral damage.

3.0 NLW CORE CAPABILITIES

To support the four operational concepts illuminated in JV 2020, the following NLW functional areas, described in the *Joint Concept for Non-Lethal Weapons*, are being utilized as mission areas for assessment purposes. They are the foundation for development of NLW programs.

3.1 Counter-Personnel Capabilities

1.a. Crowd Control - This capability includes the means to influence behavior and activity of a potentially hostile crowd as well as a rioting mob.

2.b. Incapacitate Individual Personnel - Incapacitation is defined as either physical inability (real or perceived) or mental disinclination to resist or pose a threat to friendly forces. This capability will provide a means to capture specified individuals, such as those inciting a mob or enemy combatants sought as prisoners.

3.c. Denial of Area (Land, Sea, or Air) to Personnel - This capability can include the use of physical barriers or systems that cause discomfort to those who enter the denied area.

4.d. Clear Facilities and Structures of Personnel - This capability will facilitate Military Operations in Urbanized Terrain (MOUT) by reducing the risks of noncombatant casualties and collateral damage while simultaneously minimizing the advantages occurring to an enemy defending a built-up area.

3.2 Counter-Material Capabilities

e. **Denial of Area to Vehicles** - This capability applies to denial of areas to land, sea, and air vehicles. There is no reversibility requirement for counter-materiel systems, although the use of such systems should significantly reduce risk of fatalities or serious injuries to any personnel who may be operating the vehicles.

- f. **Disable/Neutralize Specific Types of Equipment and Facilities** - This capability encompasses a wide range of subcategories based on the variety of equipment types to be targeted. Again, the use of these systems should not cause permanent injury or death to personnel in the vicinity.

4.0 GOALS AND OBJECTIVES

The JNLWP provides common direction to program participants, to focus effort and efficient use of resources in the development of NLW capabilities. The goals presented, in order of priority, are essential to fulfilling the vision of the JNLWP. Enabling objectives are subordinate to the goals they support. The objectives may support more than one goal. It is expected that each participant involved in, or in support of, the JNLWP will develop separate and distinct tasks supporting a specific objective(s).

4.1 Goal 1 - National Element of Power

The first goal is to provide effective and viable NLW capabilities to augment or influence the diplomatic/political, information, economic, or military elements of national power. Employment of NLW capabilities requires a paradigm shift in application of military power. Currently, nearly all options available to implementers of national power provide deterrence through the projection, presence, and application of lethal force. DPG 00-05 recognizes that peacetime engagement, deterrence, and conflict prevention is becoming commonplace. DoD directed the Service components to improve, expand and develop NLW programs. The NLW program will expand options for achieving national security objectives in all of the following: Internal (domestic homeland defense), Peacekeeping and Humanitarian Assistance (PK/HA) operations, Small Scale Contingencies (SSCs), and Major Theater Wars (MTWs).

4.1.1 Objective: Facilitate and support the mandates of DoD Directive 3000.3, *Policy for Non Lethal Weapons*. The success of the program requires the coordination, assistance and support of the various DoD offices and agencies, Services, and CINCs to provide the warfighters with the NLW capabilities required for mission accomplishment.

- g. The JNLWP will ensure the Assistant Secretary of Defense is routinely briefed on the NLW Program efforts and policy issues. The JNLWP will establish liaison and coordination with appropriate ASD/SO-LIC deputies to sustain NLW policy development and employment oversight.
- h. OUSD Policy (P), ASD Strategy and Threat Reduction (S&TR) is directed to support the JNLWD in the development of NLW requirements. The JNLWP will coordinate with ASD S&TR to gain the necessary program support for ensuring availability of NLWs for crisis action and planning.
- i. USD Acquisition, Technology and Logistics (AT&L) has the DoD principal oversight responsibility for the JNLWP and for Joint Service program coordination. OUSD AT&L has been directed to ensure the Marine Corps maintains the lead for development of all NLWs, and will prevent duplication of effort, particularly when NLW systems are proven and ready for development. The JNLWP will institute updates to ensure this coordination is accomplished through the existing joint committees, which include the Joint Integrated Product Team, Joint Coordination and Integration Team, and the ~~Central Action Officers~~ Requirements Integration Group scheduled meetings that occur throughout the year.
- j. ASD C3I will establish policy and provide direction for development of information and intelligence capabilities to enable effective use of NLWs. The JNLWP will continue to work this issue by its participation with the Joint Staff Information Operations (IO) Joint Warfighting Capabilities Assessment (JWCA).
- k. ASD Public Affairs will coordinate and approve guidance on public affairs matters concerning NLWs and their use. Goal 5 is directly linked to addressing this issue in this objective.
- l. The Chairman JCS is directed to advise the Secretary of Defense and to assess military requirements, monitor development of Service NLW programs and develop and promulgate joint doctrine for incorporation of emerging NLW capabilities. The JNLWP will assist in this endeavor with the hosting and execution of a NLW Joint Mission Area Analysis (JMAA) during a FY00.
- m. The CINCs are directed to ensure procedures exist for integrating NLWs into operational mission planning and for the identification of their warfighting requirements. The JNLWP will develop and field NLW capabilities that augment, complement, influence and/or can

be employed to support this requirement. The JNLWD will plan and prepare JNLWP status briefs in conjunction with the Joint Staff annual CINC trips.

- n. Secretaries of the military departments and the CINC SOCOM will ensure development and implementation of employment concepts, doctrine, tactics, training, security procedures and logistics support for fielded NLWs. They will ensure that legal reviews are conducted, consistent with U.S. treaty obligations and laws of war, and ensure development programs satisfy requirements of technical feasibility, operational utility, and policy applicability.
- o. Secretary of the Navy will ensure the CMC serves as the EA for the DoD NLW Program and that the CMC stimulates and coordinates NLW requirements. The JNLWP will plan, program, budget and coordinate for the funding of NLW technologies to support future requirements, and provide the funding support for the administrative and facilities requirements of the JNLWD at Quantico, Virginia.

4.1.2 Objective: Devise a strategy for solidifying and expanding support for long-term program success. The JNLWP will continue to develop a broader base of advocates and proponents for JNLW Systems and Programs.

4.1.3 Objective: Establish funding for the JNLWP Program Element (PE) Science and Technology (S&T) Program that will allow for JNLWP to address the concepts delineated in section 7.0.

4.1.4 Objective: Develop and promulgate a Science and Technology (S&T) Program Plan, as recommended by the 1999 National Policy Study, to address the NLW issues regarding the following: (1) nature and longevity of effects, (2) controllability of effects, (3) achieving desired effects and avoiding undesired effects, (4) human effects (personnel and material technologies), (5) weaponization potential, and (6) potential countermeasures.

4.1.5 Objective: Initiate the formal acquisition programs for the most promising non-lethal systems that can locate targets accurately and impose precisely the intended effect on selected targets, with minimal undesired/residual effects.

4.2 Goal 2 – Full Spectrum Relevance

NLW capabilities will be developed relevant in the full spectrum of military operations. NLWs will provide the flexible and selective engagement capabilities that augment lethal force weapons. Concomitantly, NLWs must complement current weapon systems. NLW systems can be effectively employed to augment the current offensive and defensive systems capabilities specified in contingency operations and Unified Command plans. NLWs will have full spectrum relevance including operations other than war and military operations in urbanized terrain. NLWs have particular applicability in asymmetric warfare in counter-narcotics, counter-terrorism, counter-proliferation, and counter-insurgency operations.

4.2.1 Objective: Develop NLWs applicable to low-, mid-, and high-intensity combat operations, as well as Military Operations Other Than War (MOOTW) and Military Operations in Urban Terrain (MOUT).

4.2.2 Objective: Pursue NLW capabilities for all levels of war to include those in support of strategic requirements.

4.2.3 Objective: Facilitate development of NLW systems for contingency operations. These systems must have the characteristics of mobility, endurance and sustainability. NLWs developed for these operations must be effectively deployed and employed without sacrificing other critical offensive and defensive capabilities.

4.2.4 Objective: Develop NLWs that provide the means for flexible and selective engagement (singularly rheostatic or tunable), augmenting but not replacing lethal force.

4.2.5 Objective: Develop non-lethal capabilities with a level of reliability that produces quantifiable, viable effects and

appropriate options for reducing the _____ and/or the Rules of Engagement.

4.2.6 Objective: Systematically analyze, evaluate, and select technologies with sound theoretical and scientific bases. NLWs derived from new and emerging technologies will provide potential for successful development, with specific application for multiple levels of war.

4.3 Goal 3 – Awareness and Confidence

The National Command Authority (NCA), Combatant Commanders and Supporting Commanders must be afforded the means to become cognizant and aware of the advantages and limitations of NLWs. NLWs directed against hostile combatants, belligerents and/or noncombatants, will enable friendly forces to effectively bridge the gap between threat and deadly force. These weapons must never be deployed as substitutes for overwhelming offensive capability. Rules of engagement must never restrain the right of our forces to self-defense with the application of lethal force.

4.3.1 Objective: Develop materials for the education of political and senior civilian leadership that address the role of NLWs, providing a clear understanding of the capabilities, limitations, and associated risks associated with decisive adjudication for their deployment and use.

4.3.2 Objective: Strengthen commander's confidence and knowledge of NLWs. Ensure that the education process for employment of developed and fielded NLWs provides an explicit understanding that availability of a non-lethal capability will not abrogate a soldier's option to employ deadly force in all appropriate circumstances.

4.3.3 Objective: Develop an integrated NLW education program suitable for dissemination to all ranks. Prior to employing NLWs, military elements must receive specific training for appropriate employment at each level of tactical and command authority. Proper NLW training must also be mandatory for civilian leadership and military Headquarters staffs. In each of the Services' training programs, JNLW education must be placed in the curricula and permanently imbedded in doctrine.

4.3.4 Objective: Develop Modeling and Simulation (M&S) tools with sufficient fidelity to assess the health effect of NLWs on the whole human body, to include a process for determination of probable irreversible damage thresholds and/or fatality. The JNLW M&S program will provide, substantiate, and build sufficient confidence to bound weapon design parameters with acceptable degrees of certainty. Models and simulations capable of evaluating the response of the whole body will become an indispensable tool for assessing the effects of NLWs on humans in the near future. See paragraph 6.6.3 for additional details regarding M&S.

4.3.5 Objective: Develop, standardize and validate the health effect quantification process capable of predicting the whole human body's response to NLW effects. Only NLWs that are consistent with international law and U.S. policy will be developed and fielded to produce predictable and acceptable human effects.

4.4 Goal 4 – Seamless and Integrated NLW Capabilities

NLW capabilities for the warfighter and/or the NCA will be developed that are seamless and easily integrated into existing weapon systems, and provide the appropriate response.

In order for the warfighters to conduct decisive operations across the full range of military operations, they must embrace the notion that NLWs will provide needed flexibility and make a viable contribution for achieving “full spectrum dominance.” Limited options are available to commanders who deploy with singular, lethal force capabilities. Units equipped with additional non-lethal capabilities can be effectively redirected to support humanitarian, peacekeeping and other contingency operations. Complex situations that dictate a demand for NLW capabilities have been aspects of warfare for decades, particularly in urban terrain.

4.4.1 Objective: Develop NLWs that are compatible, easily integrated, and complement current and planned conventional weapons systems.

4.4.2 Objective: Improve the range, accuracy, and coverage of NLWs. Simultaneously, improve the associated land, sea, air, and space-based delivery platforms. The concept of precision engagement is expanded by the advent and utilization of NLWs, to include a broader range of desired effects that can be directed precisely to the intended targets.

4.4.3 Objective: Provide a robust non-lethal capability shaped to the requirements of the warfighter. The capability must be recognized as an indispensable element of the total force, and integrated into all military operations. It also recognizes that NLWs must also have established and proven Doctrine, Organization, Training, Material, Leader Development, and People (DOTML-P) procedures.

4.4.4 Objective: Develop NLWs that facilitate military operations by ensuring these systems can be deployed and

employed without sacrificing other critical offensive and defensive capabilities and/or operations.

4.4.5 Objective: Develop and provide guidance for execution of the JNLWP Experimentation Plan which will include opportunities in exercises and war games for concept development and specifically the utilization of NLWs in seminars, exercises and games. The JNLWP will provide funding and assistance to the NLW joint experiments conducted by the Services' Battle Labs or contracted agencies/vendors, and will ensure that efforts are fully integrated with, and leverage Joint community initiatives.

4.4.6 Objective: Develop NLW capabilities to achieve desired near-instantaneous effects on targets.

4.5 Goal 5 - NLW Acceptability

Gain and maintain NLW acceptability in the public, international and military communities. Increase within the U.S. public and throughout the international community, an understanding and acceptance of the intent, goals and objectives of JNLWP. These program goals and objectives will require support and resources from all Services and from the civilian community. An affirmative endorsement in the case of the U.S. public is essential. It is paramount that warfighters employing NLWs, as well as military and civilian officials to include the NCA, are afforded a high level of confidence in NLW capabilities. A weapons program that seeks to limit collateral damage and unnecessary injury to noncombatants is acceptable in the international community. Systemic procedures and techniques must be developed that can quantify the human target effects of NLWs. Currently, some emerging technologies, such

as lasers, require a system of verification and validation that is acceptable to the NLW program, the military and the public.

4.5.1 Objective: Evaluate all NLW systems for public acceptability within the U.S., the international community, and in some cases, within the civilian communities and societies of potential adversaries.

4.5.2 Objective: Develop an educational and informative JNLWP Public Relations program to precipitate in the development, obtainment, and maintenance of NLW acceptability.

5.0 JNLWP DIRECTION

On behalf of the Commandant of the Marine Corps, the EA for the JNLWP, the program Directorate creates the synergy to facilitate identification, assessment, evaluation, development, and fielding of NLW capabilities. The JNLWD coordinates, integrates, and directs joint NLW program efforts into a unified joint program. The focus and direction is to provide a broader range of options to support future joint operations to include development of a long-range planning process in compliance with *DPG*, and National Security Strategy and the National Military Strategy and the implementation of the *JIMP* (CJCSI. 3010.02). The long-range integrated planning process ensures development and delivery of a set of validated, concept-based capabilities for NLWs. The process focuses available time and resources to ensure integrated joint operational capabilities are developed through co-evolution of JV 2020 “critical considerations” for DOTML-P. In land, sea, air, and potentially space platforms, NLW capabilities provide military commanders and civilian decision-makers options for the application of force. The direction provided herein requires analysis of contingency

scenarios in a variety of global and regional settings and incorporates an enlightened view of non-lethal capabilities and development efforts. The expanding commitment, support and joint Service cooperation will continue to evolve as NLW requirements are defined and documented.

6.0 RESPONSIBILITIES

6.1 Executive Agent

In cooperation with the other Services, CINCs, and DoD agencies, the Commandant of the Marine Corps, serving as the EA for DoD, coordinates, integrates, reviews, and recommends the NLW programs to the USD AT&L. Joint NLW research, development, test and evaluation programs, validated by the EA, are managed by a designated lead Service in accordance with the policies and procedures: DoD Directive 5000.1, *Defense Acquisition*, and DoD Regulation 5000.2-R, *Mandatory Procedures for Major Defense Acquisition Programs and Major Automated Information Systems*. Figure 1 depicts the organizational structure of the JNLWP per DOD Directive 3000.3.

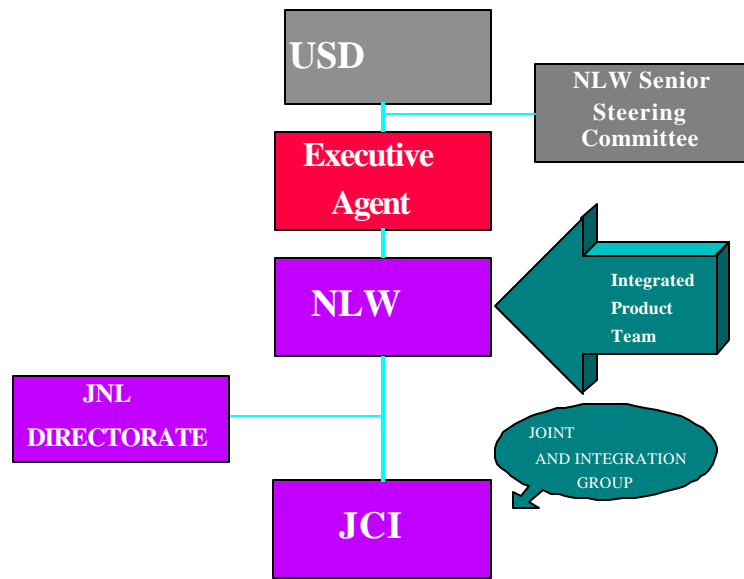


Figure 1. JNLWP Organizational Structure

6.2 NLW Senior Steering Committee

The NLW Senior Steering Committee is an ad hoc committee under the auspices of USD AT&L. The committee is primarily responsible for providing direction and assisting the EA with the resolution of complex NLW issues that have impact throughout the (DoD) and/or have the potential interest of other government offices and agencies. The Director, Strategic and Tactical Systems (ST&S), serves as the Chairman of the NLW Senior Steering Committee. Membership to the NLW Steering Committee includes:

- Representatives from the Joint Staff J3 & J8, Service Operations Deputies, and SOCOM Center,
- Representatives from ~~the Operations Deputies and~~ the Research, Development and Acquisition (RDA) offices, Department of Justice, Department of Energy, Department of Transportation, Central Intelligence Agency (CIA), and
- Representatives from the following DoD offices: ODDRE, DUSD (AT), PA&E, DoD (C), SOLIC (P), Director (SP), and the Defense Special Weapons Agency (DSWA).

6.3 Joint NLW Integrated Product Team (JIPT)

The principal role of the JIPT is to serve as the joint Service representative body in establishing and directing DoD NLW programs for joint doctrine, professional training, materiel requirements, research and development and acquisition-related activities. JIPT has functions and responsibilities to support the execution of EA responsibilities as outlined in the Joint Memorandum of Agreement (MOA). The JIPT is responsible for recommending approval and inclusion of a consolidated DoD NLW RDT&E POM into the Marine Corps' POM. The JIPT provides oversight and reviews the recommendations of the Joint Coordination and Integration Group (JCIG). The JIPT is responsible for reviewing/resolving security, environmental, health and safety, and policy issues that may arise in the development of the NLW programs.

The JIPT, chaired by the Deputy Chief of Staff, Plans, Policies and Operations, Headquarters Marine Corps (PP&O), is the final arbiter for the consolidated DoD NLW RDT&E program. The JIPT's voting members are comprised of representatives from each Service and USSOCOM. The Army Deputy Chief of Staff for Operations and Plans (DAMO-ZA) serves as vice-chair. The JIPT is responsible for coordinating and integrating program activities into a joint management system to achieve standardization, interoperability, and optimization of JNLW program resources. The JIPT may establish advisory working groups or process action teams to investigate special NLW issues as required. The JIPT will be directly supported by the JCIG and will receive technical and analytical support from the JNLWD.

6.4 Joint Coordination and Integration Group (JCIG)

The Director, JNLWD, will chair the JCIG. The JCIG will act in an oversight capacity, reviewing and recommending approval to the JIPT for new starts or the termination of unsuccessful efforts. The JCIG will coordinate and integrate NLW programs supported by the JNLWP. The JCIG will catalog and track progress of independent and Joint NLW programs, looking for efficiencies and leveraging opportunities. Each Service and USSOCOM will provide voting representatives nominated and designated by their respective Service. Non-voting members will include representatives from OSD and other relevant government agencies. The JCIG Chair is a non-voting member of the DoD NLW JIPT. The JCIG will assist in developing doctrine and will be responsible for coordination of Service NLW Mission Need Statements (MNS) and Operational Requirements Documents (ORDs). These documents will be reviewed for joint applicability and recommendations forwarded for assignment of “Lead-Service.”

6.5 Joint Non-Lethal Weapons Directorate (JNLWD)

The Directorate was established to execute and manage the JNLWP and to implement operational structure as agreed to in the Joint MOA of 21 January 1997 and restated in the latest version of the Joint MOA dated 23 June 1999. The Directorate manages the day-to-day activities and provides support to the JIPT. The Director acts on behalf of the EA and the JIPT in accordance with actions approved by the JIPT Chair and the management processes as depicted in the Joint MOA. The JNLWD will ensure that funding efficiencies are in place and approaches among the divisions are coordinated and maintained. The Directorate will represent the EA throughout a wide range of venues and audiences to include the operational CINC staffs,

Joint Staff, the Services, interagency, academia, commercial vendors, and senior government and political officials. The JNLWD combines military, civil service and support personnel tasked to implement and maintain an aggressive, energetic, and forward-looking NLW program. The Directorate's responsibilities also include serving as the DoD NLW single point of contact for liaison with foreign entities on matters of mutual interest concerning NLWs.

6.6 Supporting Activities

6.6.1 Joint Requirements Development and Integration

The Chairman of the Joint Chiefs of Staff (JCS) is charged by law to: (a) assist the President and the Secretary of Defense in providing for the strategic direction of the Armed Forces, (b) conduct net assessments to determine the capabilities of the Armed Forces of the United States, and (c) provide the Secretary of Defense (SECDEF) with advice on requirements, programs, and budget. The policy contained herein establishes a comprehensive joint process that will assist the EA in supporting the Chairman in the execution of these responsibilities. The requirements of the unified CINCs will be the drivers of JNLW development efforts, supported by the Services. Mission Needs Statements articulate needs that have been identified by individual CINCs/Services and evaluated by the Requirements Integration Group (RIG) for program applicability.

The JNLWP links the acquisition process to the Services' S&T process through the JIPT. This begins with top-down planning guidance from multiple sources and supports the warfighter's requirements. DPG and National Military Strategy Documents provide resource programming and strategic guidance, respectively. A close and effective interface among

the concept based requirements generation system, the acquisition management system, and the planning, programming, and budgeting systems is required to ensure quality products are acquired for the nation's Armed Forces. The requirements generation system produces information for decision-makers on the projected mission needs of the warfighter.

The RIG, in coordination with the JNLWD, supports the JCIG and the JIPT. The RIG compiles requirements into a prioritized list, provides a forum for discussion, coordinates requirements among the Service representatives and assists in ensuring that the non-lethal acquisition efforts of the Services are integrated. The RIG collects, records, maintains, and reconciles organizational requirement documents and monitors acquisition actions of the various JNLW Programs. The RIG assists in coordinating Service interests in issues related to NLW requirements and ensures that all actions related to NLW requirements conform with CJCSI 3170.01A and the Concept Based Requirements Process.

6.6.2 Joint Experimentation

Joint experimentation is an iterative process of collecting, developing and exploring concepts to identify and recommend better value-added solutions for changes to DOTML-P required to achieve significant advance in future joint operational capabilities. Promising advanced technologies with potential non-lethal applications will be evaluated and exploited through experimentation. Experimentation provides a unique and worthwhile opportunity for the development and assessment of the Tactics, Techniques and Procedures (TTPs) for the employment of NLWs. The JIPT has endorsed the development

of a five-year Experimentation Campaign Plan for the JNLWP. The Experimentation Campaign Plan will assist in ensuring that NLW experimentation efforts of the Services are integrated to avoid duplication of effort and to maximize the use of resources. The Experimentation Plan will demonstrate that NLW technologies are within the realm of the possible, are operationally effective in meeting warfighting requirements, and are suitable for employment throughout the spectrum of conflict.

The JNLWD will assist in or participate as the executor for the planning and integration of NLWs into Advanced Concept Technology Demonstrations and Advanced Technology Demonstrations. Service labs must develop small unit Mission Training Plans and Tactics, Techniques and Procedures, to be used as the basis for NLW integration experiments in support of New Equipment Training (NET) development. Requirements and additional support for preparation and conduct of joint experiments will be coordinated with the appropriate Service Headquarters and through the Joint Staff J7, in compliance with the Joint Experimentation Campaign Plan. The JNLWP Experimentation Campaign Plan will be developed and planned in coordination with the Joint Forces Command Experimentation Campaign Plan and will leverage existing experimentation efforts and JV 2020 assessment events identified by the CINCs, event Sponsors, and the Services.

6.6.3 Joint Modeling and Simulation

Predictability of weapon effects is paramount to gain confidence in the applications of non-lethal force. To date, sufficient empirical data on the performance and effects of NLWs is not available. Once data has been identified and verified, modeling and/or simulation (M&S) and

experimentation will provide a means of incorporating acceptable data that can be extrapolated for analysis of human effects. Additionally, M&S provides a capability to train commanders and troops, develop doctrine and tactics, formulate and assess operational plans, conduct mission rehearsal, and provide operational and technical assessments that support the acquisition process. To shorten the procurement and acquisition cycles required to field new technologies, NLWs must be integrated into existing Joint Conflict and Tactical Simulation (JCATS) and/or other relevant and compatible M&S models.

An M&S Plan and a Scenario Playbook are necessary requirements to assist in ensuring the efforts of the Services are integrated, avoid duplication of effort, and maximize the use of resources. The purpose of the M&S Plan includes demonstrating the functions of M&S as well as its utility to other program activities and delineating the priority of work. The JNLWD will utilize existing organizations and the Services to leverage and coordinate NLW data collection, modeling, simulation, and wargaming initiatives. The JNLWD will recommend prioritization of efforts to improve the value of the Joint NLW M&S efforts. The M&S Plan will become an annex to future JNLWP Master Plans. The Scenario Playbook, planned for development, is envisioned to support analysis activities in requirements generation, concept exploration, technology evaluations, material development, program planning, and test and evaluations.

6.6.4 Health/Human Effects

The successful use of NLWs is grounded in the user's level of confidence that consequences of their employment will decrease rather than increase the level of confrontation. To achieve this level of confidence, the health effects of NLWs must be completely understood. Commanders in the field, when faced with the decision of which NLW to employ in a given scenario, must be able to confidently predict the most probable effects on people. There is a recognized need for an expanded understanding of NLWs that must include an accurate assessment of the health effects on humans and to present those findings in a consistent, easily understood manner. In FY99, a Human Effects Process Action Team was formed consisting of Service acquisition executive representatives and Service surgeon general representatives who were chartered with developing a standardized process for use within the DoD for quantification of non-lethal target effects. Results and recommendations, if and when approved, will be incorporated in later revision of the Master Plan.

Additionally, the JNLWD has established an independent, non-government Human Effects Advisory Panel (HEAP). The panel provides independent assessments of methodologies used to predict the human effects of non-lethal technologies. The HEAP will be asked to focus its assessment and publish the results of specific acquisition programs each fiscal year.

6.6.5 Education and Training

A NLW Individual Weapons Instructors Course (NIWIC) training course has been endorsed by the Interservice Training Organization (ITRO). NIWIC is offered at the Marine Corps Detachment, Ft. Leonard Wood, Missouri and is a "train-the–

trainer” concept designed to give units the ability to conduct initial and sustainment training. Efforts are underway to introduce a NLW course into the PME curricula of the Services at both the intermediate and senior levels. Education connotes a much larger context than imbuing Soldiers, Sailors, Airmen, Coast Guardsmen and Marines with technical and tactical proficiency of military training.

In a larger context, education means instilling in the chain of command, up to the NCA, a full awareness of the contribution of NLWs. This is essential for success in future military operations. It is imperative that decision-makers that deploy our forces understand the advantages and limitations of NLWs. It must be clearly understood that NLWs must never be deployed as a substitute for overwhelming offensive capability. Rules of Engagement (ROE) must never restrain or abrogate the right of our forces to self-defense with the application of lethal force. It is the responsibility of the Directorate to undertake education as a matter of great importance, utilizing all appropriate means available.

7.0 RESEARCH, DEVELOPMENT, TEST AND EVALUATION (RDT&E) STRATEGY

The JNLWP RDT&E strategy directly focuses on six NLW functional areas specifically identified and validated by the Combatant Commanders and Services as priority requirements for mission accomplishment. The JNLWP RDT&E is engaged in research performed by universities, industry, and Service laboratories. In addition to planned investment in selected thrust areas, the JNLWP will highlight research objectives holding greatest promise for the development of breakthrough technologies for revolutionary 21st Century military capabilities.

The JNLWP RDT&E program is comprised of Technology Assessment/Concept Exploration, Applied Research, ACTDs/ATDs and the leveraging of development efforts of the Service laboratories. The program will demonstrate feasibility, develop new technology, and enable improvements of existing systems to meet known and projected NLW missions. This program strategy supports operational requirements, reduces technical risks, identifies options/costs/ capabilities, achieves user/developer consensus, and demonstrates operational utility. This RDT&E strategy will also support the technology insertion needs of the CINCs and Services, and must be closely coordinated with the warfighting experimentation process of the Services. The JNLW RDT&E efforts range from highly complex, leading-edge developments, to less complex, near-mature systems that will be fielded within the next 2-3 years. To maintain this aggressive cooperation with government and commercial RDT&E efforts, the JNLWD is assessing the potential operational utility and technological risks of complex, leading edge technological concepts. FY00 JNLWP efforts have been focused on extended/long-range delivery capabilities for NL payloads, balancing the need to “deliver” and the need to “deploy” the NL payloads.

7.1 New Technology Pursuits

7.1.1 JNLWP Technology Focus

Accomplishing the requirements in objectives 4.1.3 and 4.1.4 are critical to moving the JNLWP beyond the “rubber bullet modality,” the short-range, crowd control capabilities, to something with expanded utility across the spectrum of conflict. Consistent with existing guidelines on management of acquisition programs, the JNLWP technology effort will focus

on four high priority considerations (affordability, dual use-military and commercial, accelerated transition, and strong technology base) for making the decisions that determine which technologies to pursue. The guidelines are as follows:

- JNLWP projects will focus on developing new warfighting capabilities and/or increasing the effectiveness and decreasing cost, increasing operational life, and/or incrementally improving materiel through planned upgrades.
- The JNLWP will contribute to building a common industrial base by using commercial practices, processes, and products, and by developing, where possible, technology that can form the basis for both military and commercial products and applications.
- Experimentation and Advanced Concept Technology Demonstrations (ACTD) will also be used by the JNLWP to focus science and technology in supporting military needs, expediting transitions, and providing a sound basis for acquisition decisions.
- Since basic and applied research generates DoD's legacy for tomorrow's warfighter, it is imperative to maintain a stable NLW technology base investment to develop options for a viable long-term effort.

Technology providers include industry and academia as well as government and private laboratories. The JNLWP will transition technology from early scientific concepts to applied technology and ultimately to operational deployment. The JNLWP will plan, foster, and encourage scientific research and transition technology development for NLW systems, which support Full Spectrum Dominance as envisioned by *JV 2020*.

7.1.2 Technology Investment Program (TIP)

There is a continuous need for new ideas and technologies to be identified and brought forward. The Technology Investment Program (TIP) is intended to stimulate government laboratories, industry, and academia to generate new concepts utilizing new and existing technologies that potentially expand the utility of NLW in the battlespace of tomorrow. The TIP Panel was established within the JNLWP to fund short-term (1-2 year) feasibility studies with specific deliverables to eliminate

gaps identified relative to the core capabilities for NLWs. For example, the JNLWP has initiated investment programs that include chemical dispersal systems and frangible ammunition casings. Intended to investigate extended range capabilities, these proof-of-principle programs include guided projectiles and micro-encapsulation (for reduced size/weight of payload). Another example is the technological assessment for a pulsed chemical laser.

7.1.3 Concept Exploration Program (Concept Based Requirements Process-CBRP)

The JNLW Concept Exploration Program (CEP) will proactively evaluate promising new and mature technologies from any/all available sources for possible operational utility in non-lethal systems development. They will build on and mutually support existing and future, technical exploration programs of the Services, the Commanders in Chief of the Unified and Specified Commands, and various government and industry R&D activities.

Within the JNLWP, each CEP manager will organize, coordinate, develop and conduct preliminary assessments of joint concepts for the innovative application of existing and new technology. Specifically, the CEPs will: (a) capitalize on relevant technological systems and integration activities, (b) synchronize and integrate ongoing research and experimentation relevant to the selected mission area, and (c) develop and examine new and mature technologies that fall within the precepts of the Revolution in Military Affairs (RMA). The CEP will assess technology-based hypotheses to identify and recommend the best value-added solutions for changes to doctrine, organizations, training, materiel, and leadership to

achieve significant advances in operational capabilities. Qualifying criteria of technologies identified for possible use contribute to supporting one or more of the six required NLW functional areas.

The CEPs provide guidance and authority for establishing a JNLW requirements generation, integration, and acquisition capability to support JNLW research, development, and acquisition. Through active cooperation with the military Services, defense agencies, and the Special Operations Command as well as the other CINCs, the CEPs will leverage the overall efforts of the U.S. military, academia, and the private sector to achieve Full Spectrum Dominance. CEPs are intended to produce quantifiable requirements and recommend technical solutions for inclusion in the acquisition program.

8.0 ACQUISITION

8.1 Acquisition Program Baseline (APB) Procedures

The APB contains the cost, schedule, and key performance parameters (KPP) for each program in the acquisition pipeline. With progression through the requirement evolution and acquisition milestone processes, the APBs will establish focus from concept (Milestone I) to development (Milestone II) to production (Milestone III). KPP from the ORD, combined with cost and schedule measures, will be included within the APB with their associated objectives and thresholds. Objectives will equal or exceed the thresholds with an affordable, operationally meaningful, and cost-effective increment in capability above the threshold. APBs are prepared, with user inputs, by the program manager and are submitted with the required milestone documentation for Milestone I and each succeeding milestone. The milestone decision authority (MDA) in the performance of his duties will conduct the weapons review for NLWs. The appropriate authority, before the MDA's review, must validate the objectives and thresholds of the KPPs in the APB. Validation is normally accomplished during the ORD review. The JIPT will review the APB's cost, Cost as an Independent Variable (CAIV) objectives, schedule, and Post Product Support (objectives and thresholds). The Director, JNLWD, as the JIPT representative, is a signatory for promulgating JNLWP funds.

8.2 Nontraditional Acquisition Programs

The formal acquisition process is the primary mechanism for procurement of new or upgraded military capabilities. Requirement documents are required and tied to all phases of the formal acquisition process. However, nontraditional acquisitions (e.g., ACTDs) may not have formal requirement

documentation at the outset of experimentation. When a nontraditional acquisition program transitions to the formal acquisition process, the RIG/JCIG will define the performance parameters prior to the initiation of the experiment. Programs that anticipate transitioning to the formal acquisition process should start development of requirement and programmatic documents very early in the experimentation process to ensure a smooth transition to the formal acquisition process.

9.0 JNLWP MASTER PLAN SUMMARY

This JNLWP Master Plan provides direction for the DoD NLW program. It does so by managing the development of concepts and technologies in support of core capabilities for application across the spectrum of military operations. The Master Plan serves as:

- The foundation for decisions impacting joint capability development;
- The goals, objectives and basis for tasks for the JNLWP;
- A strategy for research, development, testing and evaluation;
- A basis for Science and Technology investment support decisions; and
- The common frame of reference for development of relevant doctrine, including tactics, techniques, and procedures.

The scope of the JNLWP Master Plan addresses all activities and considerations that apply to the development of NLW requirements, capabilities, and procedures. These considerations are not restricted to operational matters. They also include policy issues, including some matters relevant to the decision to use military options in the furtherance of national interests.

As mentioned earlier, this Master Plan's implementation is linked directly with the JIMP 21st Century Challenges and

Desired Operational Capabilities contained in CJCSI 3010.02. NLWs are linked to meeting the operational requirements of these future security challenges within *Dominant Maneuver, Precision Engagement, Precision Logistics, and Full Dimensional Protection* and, more specifically, to several of the *Desired Operational Capabilities* enumerated within the CJCSI.

Future revisions to the Master Plan will further define the relationships of the activities described earlier and more thoroughly identify tasks necessary to ensure a well-developed and coordinated JNLWP that achieves national goals and supports the visions of the warfighter. The JNLWP Management Plan will describe, explain and integrate the activities and functions of the Joint Non-Lethal Directorate and the Program. The Management Plan will further detail the actions, critical paths, and the interrelationship of these activities with specific focus on how to manage the NLW program and to ensure success among the processes, functions and activities in this Master Plan.

APPENDIX A

REFERENCES

- a. CJCSI 3100.01, “Joint Strategic Planning System,” 1 September 1997.
- b. CJCSI 3010.01, “Chairman’s Vision 2020 Implementation Policy,” 6 June 2000.
- c. CJCSI 3010.02, “Joint Vision 2010 Implementation Master Plan,” 9 December 1998.
- d. CJCSI 3137.01A, “The Joint Warfighting Capabilities Assessment Process,” 22 January 1999.
- e. CJCSI 3170.01A, “Requirements Generation Process,” 10 August 1999.
- f. Concept for Future Joint Operations, 15 May 1997.
- g. Joint Strategy Review, 1999 Report.
- h. Joint Warfighting Science and Technology Plan, February 1999.
- i. Joint Vision 2010, July 1996.
- j. National Military Strategy of the United States of America, “Shape, Respond, Prepare Now: A Military strategy for a New Era,” 1997.
- k. A National Security Strategy for a New Century, The White House, December 1999.
- l. Title 10, United States Code, Armed Forces.
- m. USACOM Joint Warfighting Experimentation Charter, 15 May 1998.
- n. DoD Directive 3000.3, “Policy for Non Lethal Weapons,” dated July 9, 1996.
- o. National Defense Authorization Act for Fiscal Year 1997 (Public Law 104-201).

p. CMC Ltr 1000 JNLWD, "Joint Concept for Non Lethal Weapons" dated January 5, 1998



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15 Mar 00

From: Deputy Director, Joint Non-Lethal Weapons Directorate
To: Central Action Officer, U.S. Army
Central Action Officer, U.S. Marine Corps
Central Action Officer, U.S. Navy
Central Action Officer, U.S. Air Force
Central Action Officer, U.S. Special Operations Command (SOCOM)

Subj: JOINT NON-LETHAL WEAPONS PROGRAM MASTER PLAN

Ref: Memorandum of Agreement (MOA) of June 23, 1999
between Services and SOCOM

1. To comply with the requirement in the reference and to support the mission of the Joint Non-Lethal Weapons Program (JNLWP), a JNLWP Master Plan has been prepared for publication. The JNLWP Master Plan support Joint Vision 2010, the Defense Planning Guidance (DPG), and provides a vision, including goals and objectives which will guide the management and execution of the JNLWP. The Master Plan constitutes a comprehensive and holistic program that identifies the interrelations between all non-lethal development activities.
2. The Master Plan for the JNLWP provides direction for the Department of Defense Non-Lethal Weapons program. It does so by managing the development of concepts and technologies in support of core capabilities for application across the spectrum of military operations. The Master Plan serves as (1) the foundation for decisions impacting joint capability development, (2) provides a list the goals and objectives of the JNLWP, (3) identifies a strategy for research, development, testing and evaluation, (4) provides a basis for Science and Technology investment support decisions, and (5) serves as a common framework and reference for development of relevant doctrine. Additionally, the Master Plan is a tool for managing and implementing the JNLWP as it evolves through the collaborative efforts of the joint community. The Master Plan implementation is directly linked with the 21st Century Challenges and Desired Operational Capabilities (DOC) contained in the Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 3010.12 Joint Vision Implementation Master Plan (JIMP).
3. The Services and United States Special Operations Command (SOCOM) are requested to review and provide recommended additions and changes to the Master Plan by COB 28 April

2000. Recommended changes should follow the format of line-in and lineout to include new wording. Changes are to be submitted to Mr. H. W. "Rod" Rodriguez via email to the following address: humberto.rodriguez @2asc.com, Comm (703) 441-2549, ext 1016. Address any questions concerning the Master Plan to Rod Rodriguez, or to me, Mr. Terry Wright at wrightrt@hqmc.usmc.mil, DSN 278-2951, ext 227, Comm (703) 784-2951, ext 227 or to Colonel Fenton at fentongp@hqmc.usmc.mil, DSN 278-2951, ext 225, Comm (703) 784-2951 ext 225.

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